



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1997-0715

October 1, 1997

Mr. Pieter Dykman
Oregon Department of Transportation
Environmental Services
1158 Chemeketa Street N.E.
Salem, Oregon 97310

Re: Biological Opinion for Replacement of the Billy Creek
Bridge, Douglas County, Oregon

Dear Mr. Dykman:

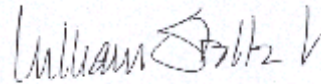
Enclosed is the National Marine Fisheries Service's (NMFS) biological opinion on the proposed replacement of the Billy Creek Bridge over Billy Creek in the Umpqua Basin in Douglas County near Drain, Oregon. This opinion addresses Umpqua River cutthroat trout, listed as endangered, Oregon Coast steelhead, proposed threatened, and Oregon Coast coho salmon. NMFS determined that listing the Oregon Coast coho salmon was not warranted but this species is considered in this biological opinion. In addition, this opinion addresses Umpqua River cutthroat trout critical habitat which has been proposed by NMFS (62 FR 40786; July 30, 1997).

This opinion constitutes formal consultation for Umpqua River cutthroat trout and a formal conference for Oregon Coast steelhead and Oregon Coast coho salmon. NMFS has determined



that the subject action is not likely to jeopardize the continued existence of these species or result in destruction or adverse modification of proposed critical habitat for Umpqua River cutthroat trout.

Sincerely,

A handwritten signature in dark ink, appearing to read "William Stelle, Jr.", with a stylized flourish at the end.

William Stelle, Jr.
Regional Administrator

Enclosure

cc: E. Chang (FHWA)
C. Sheridan (ODOT)

Endangered Species Act - Section 7
Consultation

BIOLOGICAL OPINION

Billy Creek Bridge

Agency: Federal Highway Administration/Oregon Department of
Transportation

Consultation Conducted By: National Marine Fisheries
Service,
Northwest Region

Date Issued: October 1, 1997

Refer to: OSB1997-0715

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ATTACHMENT 1 Biological requirements and status under 1996
 environmental baseline: Umpqua River cutthroat
 trout, Oregon Coast coho salmon, Southern
 Oregon/Northern California coho salmon, Oregon
 Coast steelhead, Klamath Mountain Province
 steelhead, and chum salmon

ATTACHMENT 2 Application of Endangered Species Act Standards
 to Umpqua River cutthroat trout, Oregon Coast
 coho salmon, Southern Oregon/Northern California
 coho salmon, Oregon Coast steelhead, Klamath
 Mountain Province steelhead, Lower Columbia
 steelhead, chum salmon, chinook salmon, and sea-
 run cutthroat trout

I. Background

In a letter dated January 27, 1997, the Oregon Department of Transportation (ODOT) requested formal consultation for the replacement of Billy Creek Bridge on Elk Creek Road (Highway 197) at mile post 0.11 in Douglas County near Drain, Oregon. A biological assessment (BA) was included with the January 27, 1997, letter. Douglas County is the project proponent and is receiving assistance from the Federal Highway Administration for this project. ODOT is the designated non)Federal representative for transportation related actions in Oregon supported by funds from the Federal Highway Administration and therefore is the lead agent for this consultation. After receiving the request for consultation, it was understood by the National Marine Fisheries Service (NMFS) that this proposed action was temporarily put on hold. In early September, 1997, ODOT notified NMFS by phone that they wished to proceed with consultation for the subject action.

Species considered in the BA and this biological opinion are Umpqua River cutthroat trout (*Oncorhynchus clarki clarki*), listed as endangered (61 FR 41514; August 9, 1996); Oregon Coast steelhead (*Oncorhynchus mykiss irideus*), proposed for listing as threatened (61 FR 41541; August 9, 1996); and Oregon Coast coho salmon (*Oncorhynchus kisutch*), proposed for listing as threatened (60 FR 38011; July 25, 1995). NMFS determined that the Oregon Coast coho salmon Evolutionarily Significant Unit (ESU) did not warrant listing (62 FR 24588; May 6, 1997) but this species will remain a candidate under the Endangered Species Act (ESA). NMFS will review its listing status in 3 years (or earlier if new information warrants). In addition, NMFS has proposed critical habitat for Umpqua River cutthroat trout (62 FR 40786; July 30, 1997) but has not done so for Oregon Coast steelhead or Oregon Coast coho salmon.

The objective of this opinion is to determine whether the proposed replacement of Billy Creek Bridge is likely to jeopardize the continued existence of Umpqua River (UR) cutthroat trout, Oregon Coast (OC) steelhead, and Oregon Coast (OC) coho salmon, or result in destruction or adverse modification of proposed critical habitat for UR cutthroat trout. While critical habitat has not been proposed or designated for OC

steelhead or OC coho salmon, this opinion does consider effects of the proposed action on their habitat.

II. Proposed Action

The existing bridge crosses Billy Creek near its confluence with Elk Creek. Elk Creek is a tributary to the Umpqua River. The proposed action is to replace the existing bridge with a new bridge of greater width in the same location. Construction would be staged on the existing bridge. A detour bridge would not be required.

Work within the stream channel would include removal of the existing bridge bents (abutments) and wingwalls and installation of riprap at the toe of the new bridge footings. Work within the water would be required to install riprap. The new bridge bents would be installed above the current elevation of the existing bents. A toe trench would be excavated in the active flowing channel (i.e. in-water work) to install riprap for scour protection of the new bents. Riprap installation would impact roughly 148 feet of total bank line (i.e. about 74 feet on each bank). Approximately 4,320 square feet of riparian vegetation (mostly understory) would be permanently impacted from bridge construction. All in-water work would be conducted during Oregon Department of Fish and Wildlife's (ODFW) prescribed work period of July 1 through September 15 of any year.

III. Biological Information and Critical Habitat

The listing status, biological information, and critical habitat elements for UR cutthroat trout, OC steelhead, and OC coho salmon are described in Attachment 1. While critical habitat has not been designated for UR cutthroat trout or proposed for OC steelhead and OC coho salmon, the attachment describes potential critical habitat elements for these ESUs.

IV. Evaluating Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by 50 C.F.R. Part 402 (the consultation regulations). Attachment 2 describes how

NMFS applies the ESA jeopardy standards to consultations on Federal actions.

As described in Attachment 2, the first steps in applying the ESA jeopardy standards are to define the biological requirements of the ESU and to describe the listed species' current status as reflected by the environmental baseline. In the next steps, NMFS' jeopardy analysis considers how proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (defined in Attachment 1). The analysis takes into consideration an overall picture of the beneficial and detrimental activities taking place within the action area. If the cumulative actions are found to jeopardize the listed species then NMFS must identify any reasonable and prudent alternatives to the proposed action.

A. Biological Requirements

For this consultation, NMFS finds that the biological requirements of the listed and proposed ESUs are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the ESUs. Individual environmental factors include water quality, habitat access, physical habitat elements, and channel condition. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are also necessary for the survival and recovery of the listed and proposed ESUs. This information is summarized in Attachment 1.

B. Environmental Baseline

Current range-wide status of ESUs under environmental baseline. NMFS described the current population status of the Umpqua River cutthroat trout ESU in its status review (Johnson *et al.*, 1994) and in the final rule (August 9, 1996, 61 FR 41514). The fish counts at Winchester Dam on the North Fork Umpqua River provide the best quantitative source of information on cutthroat trout abundance in the Umpqua River

Basin (see Attachment 1, Table 1). However, for the purposes of this biological opinion, it is difficult to determine the population status for the environmental baseline assessment of the entire ESU based only on Winchester Dam fish counts because this dam is located on the North Umpqua River but the ESU occupies the entire Umpqua Basin. In the absence of adequate population data, habitat condition provides a means of evaluating the status of Umpqua River cutthroat trout for the environmental baseline assessment, as explained in Attachment 1.

The range-wide status of OC steelhead was determined in Busby *et al.* (1996). The recent range-wide status of these species is summarized in Attachment 1. In the absence of adequate population data, habitat condition provides a means of evaluating the status of these species for the environmental baseline assessment.

The current range-wide status of OC coho salmon is described in Weitkamp *et al.* (1995) and summarized in Attachment 1. In general, current spawning escapements have declined to less than 5 percent of abundance in the early 1900's and recent average spawner-to-spawner ratios are below replacement. However, an increasing trend in natural escapement has occurred in recent years. NMFS' Biological Review Team generally agreed that the harvest and hatchery reforms under the Oregon Coastal Salmon Restoration Initiative (OCSRI) may reduce the short term risk of extinction but determined that habitat protection and restoration are key to long-term survival of this ESU. NMFS concluded that the OC coho salmon is not likely to become endangered based on habitat protection measures under the Northwest Forest Plan and the OCSRI, and the recent increasing trend in natural escapement.

Current status of listed/proposed ESUs under environmental baseline within the action area. The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). The general action area can be defined as the immediate project site and areas downstream to Elk Creek's confluence with the Umpqua River. All three of the listed species addressed in this opinion are known to occur in Billy Creek. The proposed action area is used for migration, no spawning occurs in this area. Billy Creek may

serve as an off-channel refuge for species rearing in Elk Creek.

Based on the best information available on the current status of the proposed/listed ESUs rangewide (Attachment 1) and within the action area, the information available regarding population status, population trends, and genetics (see Attachment 2), and the poor environmental baseline conditions within the action area, NMFS concludes that not all of the biological requirements of the proposed and listed ESUs within the action area are currently being met under the environmental baseline. Thus, actions that do not retard attainment of properly functioning aquatic conditions when added to the environmental baseline would not jeopardize the continued existence of anadromous salmonids.

V. Analysis of Effects

A. Effects of Proposed Action

The effects determination in this opinion were made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting effects of actions on them. This process is described in the document "Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996). This assessment method was designed for the purpose of providing adequate information in a tabular form for NMFS to determine the effects of actions subject to consultation. The effects of actions are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the project area. The results of the completed checklist for the proposed action provides a basis for determining the overall effects on the environmental baseline in the action area. The action covered in this opinion was shown to maintain environmental factors over the long-term (more than one year) that could potentially be affected by the proposed project (see Table 1 below).

Attachment 3 lists ODOT's general minimization and avoidance measures regarding in-water work, erosion control, hazardous materials, riparian impacts, and monitoring. Sediment inputs are likely to result from the proposed action due to in-water work but are expected to be temporary and localized. State regulations require that turbidity not exceed 10 percent above background for more than two hours. ODOT requires that

turbidity not exceed 10 percent above background for any length of time. A number of measures would be implemented to reduce sedimentation (see Attachment 3). All control devices would be inspected daily during periods of precipitation and weekly during dry periods.

Hazardous material storage, refueling areas and maintenance areas would be located no closer than 165 feet to the river. External grease and oil would be removed from equipment used for in-water work prior to use within the two-year floodplain. A Pollution Control Plan (including a spill response plan) would be developed.

Table 1. Summary checklist of environmental baseline and effects of the Billy Creek Bridge replacement on relevant indicators. Short term (less than one year) impacts on relevant indicators are indicated by a minus (-) sign and are not expected to alter the existing environmental baseline.

ENVIRONMENTAL BASELINE				EFFECTS OF THE ACTION(S)		
<u>PATHWAYS:</u>						
INDICATORS	Properly ¹ Functionin g	At Risk ¹	Not Propr. ¹ Functionin g	Restore ¹	Maintain ¹	Degrade ¹
<u>Water Quality:</u>						
Temperature	X				X	
Sediment	X				X	
Chem. Contam./Nutr.	X				X	
<u>Habitat Access:</u>						
Physical Barriers	X				X	
<u>Habitat Elements:</u>						
Substrate		X			X	
Large Woody Debris			X		X	
Pool Frequency		X			X	
Pool Quality		X			X	
Off-channel Habitat		X			X	
Refugia		X			X	
<u>Channel Conditions:</u>		X			X	
Width/Depth Ratio	X				X(-)	
Streambank Cond.						
Floodplain		X			X	
<u>Connectivity</u>						
<u>Watershed Conditions:</u>		X			X	
Road Density/Loc.						
Disturbance History			X		X	
Riparian Reserves			X			

¹ These three categories of function ("properly functioning", "at risk", and "not properly functioning") and the three effects ("restore", "maintain", and "degrade") are defined for each indicator in NMFS (1996).

The bridge design allows for approximately 2,160 square feet of additional area than currently exists with the current structure. This would allow the channel to function more naturally. A Douglas County right-of-way area within the riparian corridor of Billy Creek would be planted with both overstory and understory riparian vegetation. This would include about 500 cuttings and seedlings covering roughly 4,320 square feet of area. Exposed riprap areas (areas not directly under the proposed bridge) would be backfilled with native top soil and replanted with Pacific ninebark, red-osier dogwood, and willow. About 1,620 square feet of area would be replanted. Furthermore, ODOT would secure logs at the base of backfilled riprap areas within the two-year high water mark to provide structure.

B. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." For the purposes of this analysis, the action area encompasses the project site on Billy Creek downstream to the Elk Creek/Umpqua River confluence. Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. In addition, non-Federal actions that require authorization under section 10 of the ESA will be evaluated in section 7 consultations. Therefore, these actions are not considered cumulative to the proposed action. NMFS is not aware of any future new (or changes to existing) State and private activities within the action area that would cause greater impacts to listed species than presently occurs. NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

VI. Conclusion

NMFS has determined, based on the available information, that the proposed replacement of Billy Creek Bridge is not likely to jeopardize the continued existence of UR cutthroat trout, OC steelhead, OC coho salmon, or result in the destruction or adverse modification of proposed critical habitat for UR cutthroat trout. NMFS used the best available scientific and commercial data to apply its jeopardy analysis (described in Attachment 2), when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline (described in Attachment 1), together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that

it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts. All three listed species could be present in the action area during the in-water work period of July 1 through September 15. Incidental take could result from in-water construction noise and vibration. Direct mortality from in-water construction activities is not expected to occur.

In the long-term, NMFS expects that the significant decrease in channel constriction under the bridge, riparian plantings both over the riprap areas and in the Douglas County right-of-way, and addition of large wood, should improve habitat conditions in the immediate action area. NMFS does not expect that potential effects from the proposed action, including short-term sediment input and construction noise and vibration, would result in reduced prespawning survival, egg-to-smolt survival, or upstream/downstream migration survival rates to a level that would appreciably diminish the likelihood of survival and recovery of these species.

VIII. Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. NMFS finds that the general minimization/avoidance measures (Attachment 3) and site specific mitigation measures, as described in the BA, are sufficient and therefore we do not recommend any further conservation measures at this time.

IX. Reinitiation of Consultation

Consultation must be reinitiated if: the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

X. References

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available."

This section identifies the data used in developing this opinion.

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-27, 261p.

Johnson, O.W., R.S. Waples, T.C. Wainwright, K.G. Neely, F.W. Waknitz, and L.T. Parker. 1994. Status review for Oregon's Umpqua River sea-run cutthroat trout. U.S. Dept. of Commer., NOAA Tech. Memo. NMFS-NWFSC-15, 122p.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.

Weitkamp, L.A., T.C. Wainwright, G.J. Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California. U.S. Dep. of Commer. NOAA Tech. Memo. NMFS-NWFSC-24, 258p.

XI. Incidental Take Statement

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are

necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

The NMFS anticipates that the action covered by this biological opinion has more than a negligible likelihood of resulting in incidental take of UR cutthroat trout, OC steelhead, and OC coho salmon because of effects from short-term increases in sediment levels and the potential for direct incidental take during in-water work. Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on the species' habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Biological Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the BA, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion.

B. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measure(s) are necessary and appropriate to minimizing take of UR cutthroat trout and OC steelhead.

1. The ODOT shall minimize the potential for direct incidental take of UR cutthroat trout, OC steelhead, OC coho salmon due to sedimentation and operation of heavy equipment.

C. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, ODOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

- 1a. Minimization/avoidance measures listed in Attachment 3 for in-water work, erosion control, hazardous materials, riparian impacts, and monitoring shall be implemented for the proposed action in accordance with the terms and objectives of Attachment 3, ODOT General Minimization/Avoidance Measures.

- 1b. All work within the active flowing channel (in-water work) shall occur between July 1 and October 31.
- 1c. Fish passage around the action area shall be maintained at all times.
- 1d. Replace riparian vegetation at the project site to the maximum extent horticulturally possible.